



IPU

Docket No.: M0025.0296/P296  
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:  
Duncan Yardley

Application No.: 10/689,679

Confirmation No.: 4921

Filed: October 22, 2003

Art Unit: 3753

For: PILLAR SINK MIXER WITH HAND SPRAY

Examiner: S. M. Hepperle

SUBMISSION OF PRIORITY DOCUMENT

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450


Dear Sir:

Applicant hereby submits a certified copy of the priority application to  
perfect the claim for priority under 35 U.S.C. § 119 as follows:

<u>Country</u>	<u>Application No.</u>	<u>Date</u>
United Kingdom	0224580.1	October 22, 2002

Dated: January 30, 2006

Respectfully submitted,

By 

Stephen A. Soffen

Registration No.: 31,063

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Attorney for Applicant

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The Patent Office  
Concept House  
Cardiff Road  
Newport  
South Wales  
NP10 8QQ

I, the undersigned, being an officer duly authorised in accordance with Section 74(1) and (4) of the Deregulation and Contracting Out Act 1994, to sign and issue certificates on behalf of the Comptroller-General, hereby certify that annexed hereto is a true copy of the documents as originally filed in connection with the patent application identified therein together with the Statement of inventorship and of right to grant of a Patent (Form 7/77), which was subsequently filed.

I also certify that the attached copy of the request for grant of a Patent (Form 1/77) bears an amendment, effected by this office, following a request by the applicant and agreed to by the Comptroller-General.

In accordance with the Patents (Companies Re-registration) Rules 1982, if a company named in this certificate and any accompanying documents has re-registered under the Companies Act 1980 with the same name as that with which it was registered immediately before re-registration save for the substitution as, or inclusion as, the last part of the name of the words "public limited company" or their equivalents in Welsh, references to the name of the company in this certificate and any accompanying documents shall be treated as references to the name with which it is so re-registered.

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Dated 16 January 2006

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For more information, please contact the USPTO at 1-800-351-4050.

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22 OCT 2002

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P01/7700 0.00-0224580.1

# Request for grant of a patent

(See the notes on the back of this form. You can also get an explanatory leaflet from the Patent Office to help you fill in this form)

## The Patent Office

Cardiff Road  
Newport  
Gwent NP9 1RH

1. Your reference **GBP86506**

2. Patent application number  
(The Patent Office will fill in this part)

**0224580.1**

3 Full name, address and postcode of the or of each applicant (underline all surnames)

Avilion Limited,  
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Orwell Close  
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Rainham  
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United Kingdom

Unit 1  
Petersham X111  
Ferry Lane  
Rainham  
Essex RM13 9TY

Patents ADP number (if you know it)

If the applicant is a corporate body, give the country/state of its incorporation

England

Greg Willis  
Caveat Clerk/Reg. Matter  
GR07 Ext. 4423

~~6550438001~~  
06550438002

10/6/03

4. Title of the invention **A Pillar Sink Mixer with Hand Spray**

5. Name of your agent (if you have one)  
"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)

Marks & Clerk  
57 - 60 Lincolns Inn fields  
London WC2A 3LS

Marks & Clerk  
90 Long Acre  
LONDON  
WC2E 9RA  
ADP No. 00000018001

Patents ADP number (if you know it)

18001

6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and (if you know it) the or each application number

Country

Priority application No  
(if you know it)

Date of filing  
(day / month / year)

7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application

Number of earlier application

Date of filing  
(day / month / year)

8. Is a statement of inventorship and of right to grant of a patent required in support of this request? (Answer 'Yes' if:  
a) any applicant named in part 3 is not an inventor, or  
b) there is an inventor who is not named as an applicant, or  
c) any named applicant is a corporate body.  
See note (d))

Yes

# Patents Form 1/77

9. Enter number of sheets for any of the following items you are filing with this form.  
Do not count copies of the same document

Continuation sheets of this form 0

Description 4

Claim(s) 2

Abstract 1

Drawing(s) 2+2

10. If you are also filing any of the following,  
state how many against each item.

## Priority documents

Translations of priority documents

Statement of inventorship and right  
to grant of a patent (Patents Form 7/77)

Request for preliminary examination  
and search (Patents Form 9/77) 1

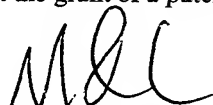
Request for substantive examination  
(Patents Form 10/77)

Any other documents  
(please specify)

11.

I/We request the grant of a patent on the basis of this application.

Signature



Date: 22 October 2002

12. Name and daytime telephone number of  
person to contact in the United Kingdom

GB Patent Filings  
0207 400 3000

**Patents Form 7/77**

Patents Act 1977  
(Rule 15)

The  
**Patent  
Office**

**7/77** 02 11

**Statement of inventorship and of  
right to grant of a patent**

The Patent Office

Cardiff Road  
Newport  
South Wales  
NP9 1RH

1. Your reference

26 NOV 2002

GBP86506

2. Patent application number

LONDON

0224580.1

(if you know it)

27NOV02 8117514-3 803312  
PO7/7700 0-00-0224580.1

3. Full name of the or of each applicant

Avilion Limited,

4. Title of the invention

A Pillar Sink Mixer with Hand Spray

5. State how the applicant(s) derived the right  
from the inventor(s) to be granted a patent

by virtue of employment

6. How many, if any, additional Patents Forms  
7/77 are attached to this form?

(see note (c))

7.

I/We believe that the person(s) named over the page  
(and on any extra copies of this form) is/are the inventor(s) of the  
invention which the above patent application relates to.

Signature

M&C

Date

26 November 2002

8. Name and daytime telephone number of  
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GB Patent Filing section

0207 400 3000

**Notes**

- a) If you need help to fill in this form or you have any questions, please contact the Patent Office on 0645 500505.
- b) Write your answers in capital letters using black ink or you may type them.
- c) If there are more than three inventors, please write the names and addresses of the other inventors on the back of another Patents Form 7/77 and attach it to this form.
- d) When an application does not declare any priority, or declares priority from an earlier UK application, you must provide enough copies of this form so that the Patent Office can send one to each inventor who is not an applicant.
- e) Once you have filled in the form you must remember to sign and date it.

**Patents Form 7/77**

Enter the full names, addresses and postcodes of the  
inventors in the boxes and underline the surnames

Yardley, Duncan  
76 Millhaven Close  
Chadwell Heath  
Essex RM6 4PN

Patents ADP number (if you know it):

8517054001

**Reminder**  
Have you signed the form?



### A Pillar Sink Mixer with Hand Spray

This invention relates to pillar taps in which the tap body is mounted some distance above a work top, and in particular to taps having a mixing system to mix hot and cold water and a separate manually operated spray nozzle attached to the water mixer by a flexible tube. Such arrangements are often found in domestic kitchens.

GB2361047 discloses a pillar tap system that provides a spray nozzle with a separate flexible hose. The water supply to the spray nozzle, and control of the temperature of the water so supplied, comes from the same mixer system as that used for the tap nozzle via a diverter in the mixing chamber. Whilst this system does provide a spray nozzle, it has a number of disadvantages. One disadvantage is that the mixing chamber is under the mounting surface, occupying a large amount of space. The valves controlling the water flow are housed below the mounting surface and controlled by long spindles extending down from the tap levers, through the pillars.

According to an aspect of the present invention there is provided a pillar sink mixer comprising a hot tap pillar, a cold tap pillar and a mixing chamber situated, in use, above a mounting surface for the mixer. The mixing chamber is in fluid communication with a hand spray via a channel that is partially situated within one of the tap pillars.

Tap housings at the top of the pillar stems house the valve chambers and connect via a bridge. A mixing chamber is positioned on the bridge and an outlet nozzle extends from the mixing chamber.

The water passage from one tap housing to the mixing chamber runs alongside a return passage from the mixing chamber to the housing, Within the pillar supporting the tap housing is a passage supplying water to the valve and another passage delivering the water from the return passage to the hose of a hand spray.

Other aspects and features of the invention will be apparent from the following description and the accompanying claims.

The invention will now be described, by way of example only, with reference to the accompanying drawings in which:-

Figure 1 shows a cross-sectional view of an embodiment of the present invention.

Figure 2 shows an enlarged cross-sectional view of the cold tap pillar of the embodiment of Figure 1.

Figure 1 shows a pillar mixer tap forming an embodiment of the present invention. The mixer is mounted on a mounting surface 2, such as a kitchen top or sink rim, in which two holes 4, 6 are formed to receive the two tap pillars 8, 10. Hot water enters the pillar sink mixer through the tap pillar 8, and cold water enters the pillar sink mixer through pillar 10. Each pillar 8, 10 has a housing 12, 14 at its top end which houses a valve chamber and valve 16 operated by levers or handles 18, 20. The housings 12, 14 are both in fluid connection with a mixing chamber 22 via passages 24 and 26 respectively in a bridge 28. When the respective tap valves 16 are opened, water flows into the mixing chamber 22 through the passages 24, 26, and through outlet nozzle 30 which is mounted on the bridge 28 at an outlet 34

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of the mixing chamber 22. The arrangement thus far described is well known in the art of pillar sink mixers.

The mixing chamber 22 houses a diverter valve 32 which determines the direction of flow of the mixed water from the mixing chamber 22. The diverter valve 32 has two outlets 34, 36 which lead respectively to tap nozzle 30 and a hand spray 38. The diverter valve 32 is an exclusive output system, therefore whilst the hand spray 38 is in operation, substantially no water will pass to the tap nozzle 30. The operation of diverter valves is well known and is described for example in USA-4,609,006.

Referring to Figure 2, the hand spray outlet channel which provides a fluid communication channel for the mixed water from the mixing chamber 22 to the hand spray 38, comprises three portions 40, 42, 44. The first portion comprises a passage 40 from the second outlet 36 of the mixing chamber 22 to the tap housing 14. Passage 40 is housed within bridge 28, alongside passage 26. The second portion comprises passage 42 that is defined by the wall of tap pillar 10. Within the pillar 10 is a tube 46 which delivers cold water up through the pillar 10 to valve 16. Tube 46 is sealed at its upper end to a valve seat 50 in partition wall 52. Tube 46 extends down within pillar 10. These two passages 42, 46 are thus housed within pillar 10. The third portion of the hand spray outlet channel is a flexible hose 44 that provides fluid communication from an outlet 48 from the lower end of the tap pillar 10, beneath the mounting surface 2 to the hand spray 38. A T-shaped union is mounted on the lower end of pillar 10 and tube 46 passes through union 54, with a seal 56 being provided between the tube 46 and union 54 at the lower outlet of the union 54. Flexible hose 44 is coupled to the side outlet of the union 54, in fluid communication with passage 42. The hand spray 38 can be lifted out from the mounting surface 2.

The operation of the hand spray is well known. Valves 16 are opened by turning handles 18, 20 to give the required water flow through nozzle 30 via mixing chamber 22. Cold water passing through passage 46, via valve 16 to passage 26, chamber 22 and nozzle 30. When a push button valve on hand spray 38 is pressed, water can flow from spray 38. Diverter valve 22 is caused to move to close off the outlet 34 to nozzle 30, by the pressure differential across the valve ends, so that water will then flow out of mixing chamber outlet 36. Water flows through passages 40, 42 and hose 44 to spray 38.

It will be appreciated that the passage 40 may be directed towards hot tap housing 12, pillar 8 enclosing the passage 46 and connecting with the hose 44.

The invention provides a pillar mixer with a hand spray function and yet with minimal additional space requirement.

**CLAIMS:**

1. A pillar sink mixer having a hand spray, in which a hot and cold valves are supported on respective pillars, the pillars being joined by a bridge having a mixing chamber and supporting a tap nozzle,

wherein a water passage from the mixing chamber to the spray extends through one of the pillars.

2. A pillar sink mixer comprising:

a hot tap pillar and a cold tap pillar in a spaced-apart relationship, each tap pillar including a water valve housing, situated above a mounting surface;

a mixing chamber in a bridge situated above said mounting surface between said water valve housings, the mixing chamber having a first inlet in fluid communication with said water valve housing of said hot tap pillar by a first conduit, a second inlet in fluid communication with said water valve housing of said cold tap pillar by a second conduit, and two outlets, a first outlet in fluid communication with a tap nozzle and a second outlet in fluid communication with a hand spray device;

wherein said hand spray device is in fluid communication with said second outlet of said mixer chamber through a hand spray outlet passage a portion of which is housed in at least one of said bridge and a tap pillar.

3. A pillar sink mixer as claimed in claim 2, wherein said mixing chamber includes a diverter valve, arranged to divert the flow of mixed water from said first outlet of said mixing chamber to said second outlet of said mixing chamber, said second outlet being in fluid communication with said hand spray device, when said hand spray device is operated to discharge water therefrom.

4. A pillar sink mixer comprising:

a hot tap pillar and a cold tap pillar joined by a bridge situated, in use, above a mounting surface,

a diverter valve in the bridge and having outlets in fluid communication with a tap nozzle mounted on the bridge and with a hand spray;

wherein a part of a passage providing fluid communication between the diverter valve and the hand spray is situated within one of said tap pillars.

**ABSTRACT:**

A pillar sink mixer comprises a hot water tap pillar 8, a cold water tap pillar 10, a mixing chamber 22 and a diverter valve 32 to supply mixed water to a tap nozzle 30 or to a hand spray 38. The mixing chamber 22 and diverter valve 32 are positioned in a bridge 28 above a mounting surface 2, and a passage 40, 42, providing fluid communication with the hand spray device 38, being incorporated within the bridge 28 and a tap pillar 10.

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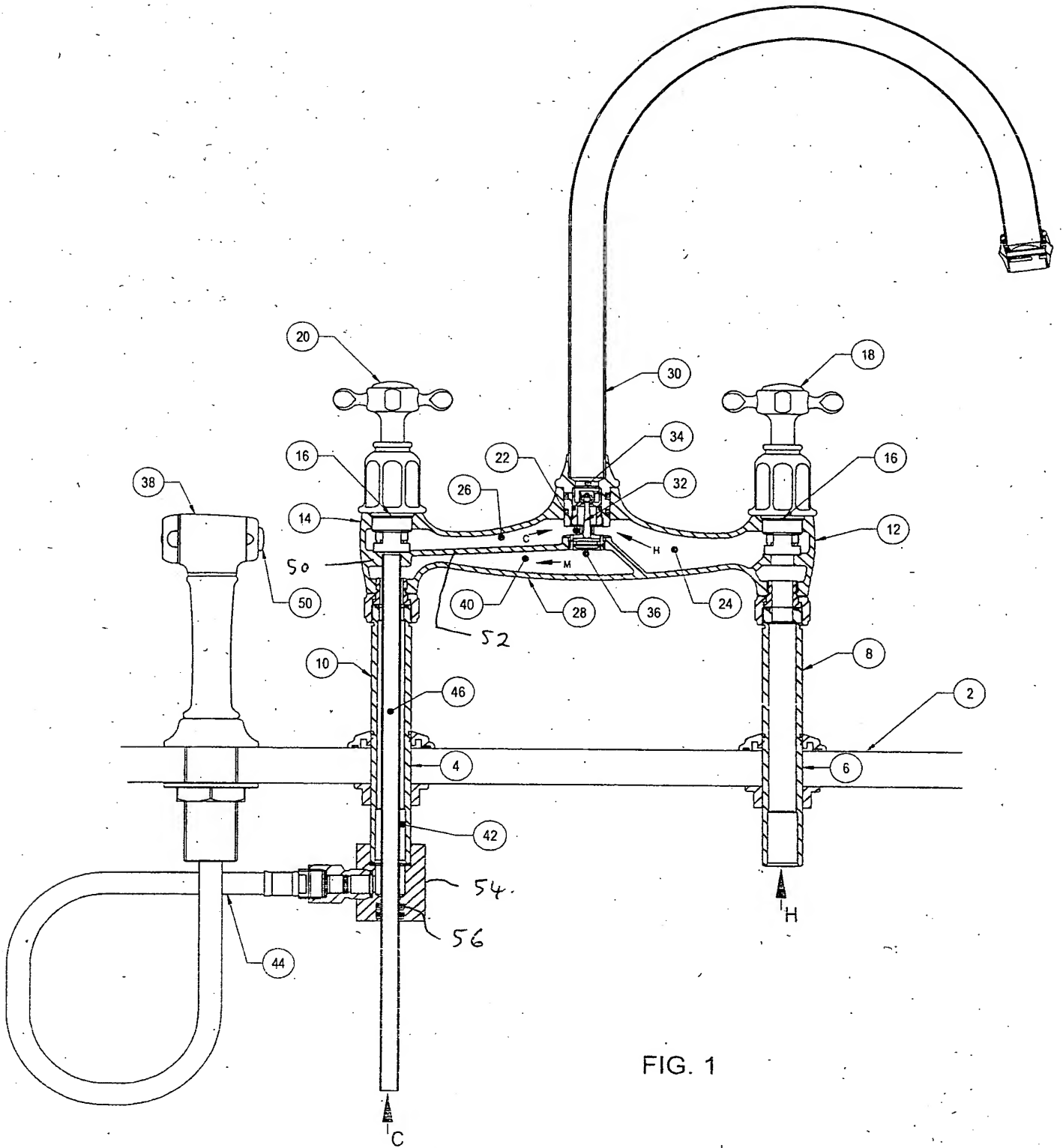
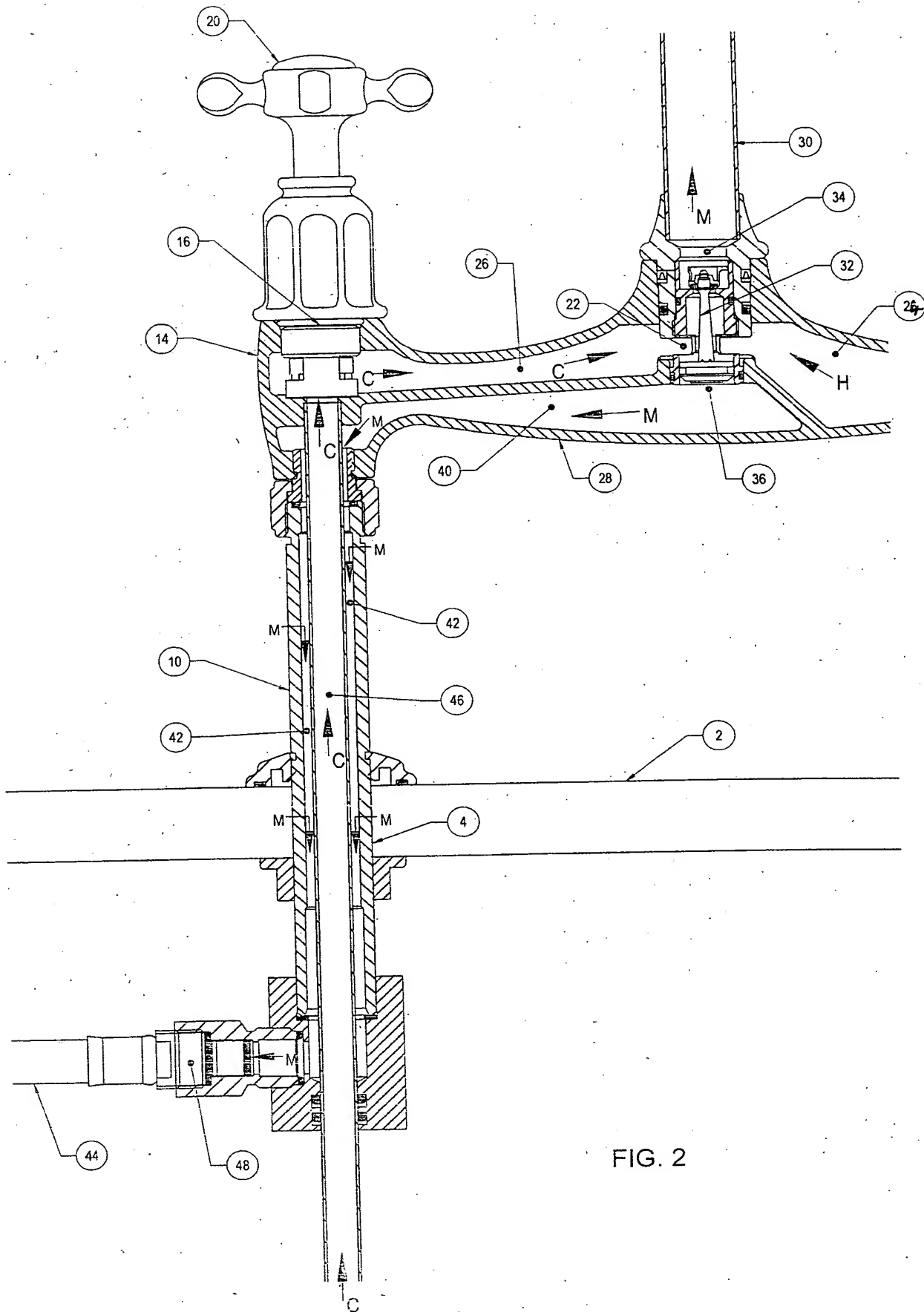


FIG. 1

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